(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 1 September 2005 (01.09.2005)

PCT

(10) International Publication Number WO 2005/080207 A1

(51) International Patent Classification⁷: B29C 65/16, B23K 26/18, B31B 1/66

B65B 51/22,

(21) International Application Number:

PCT/FI2005/000118

(22) International Filing Date: 24 February 2005 (24.02.2005)

(25) Filing Language:

Finnish

(26) Publication Language:

English

(30) Priority Data:

20040290

25 February 2004 (25.02.2004) F

(71) Applicant (for all designated States except US): STORA ENSO OYJ [FI/FI]; Kanavaranta 1, FI-00160 Helsinki (FI).

(72) Inventors; and

(75) Inventors/Applicants (for US only): MÄÄTTÄ, Päivi [FI/FI]; Kirurgintie 152, FI-55100 Imatra (FI). LAAKSO, Petri [FI/FI]; Korpisuonkatu 11 A 2, FI-53850 Lappeenranta (FI). HOVIKORPI, Jari [FI/FI]; Seiskarintie 5, FI-48310 Kotka (FI). VESANTO, Risto [FI/FI]; Koivuniementie 30, FI-55800 Imatra (FI).

(74) Agent: BERGGREN OY AB; P.O. Box 16 (Jaakonkatu 3 A), FI-00101 Helsinki (FI).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

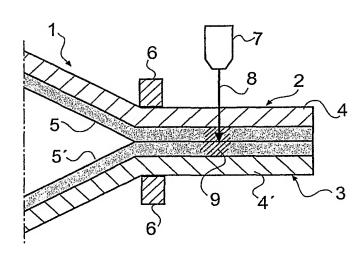
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR SEALING A FIBER-BASED MATERIAL



(57) Abstract: The invention relates to a method for sealing a fibre-based material (1, 4) to a counter-surface to be bonded to it by melting polymer present at the sealing point. In accordance with the invention, the sealing is performed by directing a laser beam (8) through the fibre layer (4) of the material to a radiation-absorbing pigment disposed in the sealing area (9), with the absorption heat melting the polymer (5) and generating The method allows sealing of the sealing. plastic-coated paper or board to itself, to another plastic counter-surface or also to paper or board without any plastic coating. It is also possible to seal uncoated paper or board to paper or board containing plastic, such as plastic-coated paper or board, or to a plastic film. The absorptive pigment, e.g. carbon black, may be admixed in the plastic coating of the board or paper or the plastic film formed on the counter-surface, or the pigment may be located on the surface of

the material to be sealed or its fibre layer, or on the counter-surface to which the material is sealed, e.g. as a component of printing ink applied to the counter-surface.